

MEANS FOR THE TEEING OF A GOLF-BALL

This invention concerns reliable golf-ball teeing means which are suitable for driving-range and golf-club use.

At present, at a driving range, the ball is held above the floor by means of a robust, flanged tube of rubber which is secured into a heavy, floor mat. Also, at a golf-club,
5 the ball is held above the ground, or a practice mat, by a short, slender, cupped spike which is lightly pushed into the ground, or net. And consequently, at present either the ball-holder can not be driven with the club and causes undesirable impact force and wear, or it is too easily driven with it and damaged, or lost.

Significant increase of the ground purchase of the spike, by an increase of its length
10 below ground, requires an impractical increase of both the insertion force and the stem stiffness, and would greatly increase the probability of club-contract-induced failure. Also, at present, for a given ball-holder, little, or no, variation of the teeing height is possible and club contact upon the ground, or floor, mat causes undesirable club forces and wear. The ground from which the ball is teed also is too susceptible
15 to club damage and, in bad weather, can become hard, or soft, enough to prevent play. And many thousands of pounds have to be spent annually for the maintenance of the courses teeing areas.

The purpose of this invention is the provision of several, functionally related, long-life, teeing means which remove some, or all, of the above stated deficiencies.

20 According to the invention, there is provided teeing means comprising a ball-holder, a
'ball-holder keeper', a binder, a ground, or floor, mat and a small recess in the ground,
or floor, below the mat, for accommodation of part of the stem of the ball-holder;
wherein the ball-holder's ball-cup can be positioned at a variable height above the
surface of the mat, by the sliding of the stem of the ball-holder vertically upwards, or
25 downwards, relative to the keeper, which has a projection on the stem which engages
the binder to limit the movement of the holder away from the keeper; wherein the
keeper is secured into a cavity in the mat and causes the holder contacting it to be held
at the height and alignment required for the teeing of the ball; wherein the binder
provides a force normal to the holder's stem which pushes it into an aligning recess on
30 the keepers surface and produces a frictional force upon it which is slightly greater
than the combined weight of the ball and the holder; wherein the binder has sufficient
elasticity to allow the holder to easily pivot upon the top of the keeper's recess as
necessary for the passage of the golf club over it, to cause its return to the vertical
when the club has passed, and to have sufficient purchase upon the holders stem (at its
35 protrusion) and the keeper; for the retention of the holder upon the keeper; wherein
the mat into which the keeper is secured is one of those presently available for
driving-range, or practice-net, purposes, or is one which presents less resistance to the
club because the playing surface which it provides is produced by a large number of
tall resilient bristles; wherein the mat recess is such that the lower part of the holder's
40 stem can move freely, when it is fully deflected by the action of the club; wherein the
binder is an encompassing band of elastic material held by the keeper to a circular or
narrow rectangular shape, or is a straight length of spring material, or coiled spring,
which is flexibly anchored to the holder's stem, and wherein, alternatively, the keeper
and the stem of the holder are such that the necessary holding force upon the ball-

45 holder is provided magnetically and the binder is a collar on the holder which rotates upon the top of the keeper, through which the stem protrusion cannot pass.

By way of example only, four embodiments of the invention will now be described with reference to the accompanying figures in which:-

Fig 1 is partly cross-sectioned side elevation of the first embodiment.

50 Fig 2 is a horizontal cross-section through it, in the plane of 'XX'.

Fig 3 is a partly cross-sectioned side elevation of the second embodiment.

Fig 4 is a partly sectioned plan of it.

Fig 5 is a sectioned side elevation of the third embodiment.

Fig 6 is a sectioned elevation of the third embodiment, in the plane of 'XX'.

55 Referring to Figs 1 and 2, it can be seen that, for the first embodiment, the teeing means 1 consists of the holder 2, the keeper 3, and the mat 4. The keeper is located in a cavity 5 of a mat 4 which surrounds the stem 6 of the holder 2 and is secured by the circular flange 7 of the keeper. The keeper is a circular shaped magnet, the ends of which form a recess 8 which is aligned at right angles to the surface of the driving
60 range floor. The stem 6 of the holder is made of high quality ferritic steel and, consequently, is drawn by force 'F1' on to the junction line of the magnetic surfaces and, thereby, held aligned at right angles to the playing surface of the mat 4. The keeper, therefore, also serves as a binder.

The surface, contact-fiction force 'F2' produced between the holder and the keeper is
65 sufficient to prevent sliding of the stem 6 downwards, under the weight of the holder
and the ball 9; and is constant for every possible height of the ball-cup above the
mat 4.

Upward movement of the holder 2 is limited by the rotatable collar 10 on the keeper
which has a hole diameter too small to allow the stem protrusion to pass through it.

70 Downward movement of the holder 2, while kept vertical, is limited by the depth of
the recess 12 provided in the floor, or ground, and is made sufficient to allow the top
of the ball cup 13 to be positioned level with the top of the mat 4.

A recess 14 is provided in the base of the mat 4 through which the stem of the holder
can freely travel when the holder 2 is driven forward with the club, in the direction of
75 the arrow 'A'.

Above the level of the mat, the holder stem 6 has the ball-cup 13 and an integral
sleeve moulded onto it, in high-impact rubber, or plastic, so that impact damage to the
club and the tee are avoided.

For the second embodiment, the force required to keep the ball holder of the tee
80 aligned at right angles to the mat surface is provided by a tension spring, instead a
magnet.

It can be seen from Figs 3 and 4, that the teeing means 1 consists of the holder 2, the keeper 3 and the mat 4; and that the keeper 3 is located in a recess made in the floor and retained by the flange 5.

85 The holder 2 is essentially the same as that described for the first embodiment but has a loosely fitting, lugged collar 21 (the binder) on its stem 6. This is connected to the tension spring 22 and draws the stem into lateral contact with a recess 23 provided at one end of the keeper 3. Also, it can be moulded from high performance plastic. It is held stationary as described for the first embodiment. The body of the keeper 3 is a
90 long, rectangular cross-section tube having a short, semi-circular, vertically-aligned channel at one end and a closure cap 24 at the other; and the collar. 21 passes through the aperture 25, made in the wall of the end channel.

The keeper 3 is positioned so that the club contact on the holder 2 drives it towards the lower part 3, causing rotation in the direction of the arrow 'A' which, initially, is
95 centred at its point contact on the top of channel 23. Subsequently, the rotation becomes centred upon the collar 21 when this is raised sufficiently by the movement of the upper part 2. Dislodgement of the collar 21 from the channel 23 is prevented by the spring 22.

For the third embodiment (shown in Figs 5 & 6) the keeper 3 is secured to the upper
100 surface of a bristled board 31, between its bristle groups 32 which form the 'playing-surface, and are tall enough for club contact upon the keeper and the board and contact damage to be generally avoided. It can be seen from Fig 6 that the binder 33 is in the form of a circular band which is trapped within a groove 34 on the keeper 3;

This holds the stem 6 of the holder 2 into the semi circular groove 35, to maintain it as
 105 required for teeing the ball. When struck by the club, the band is locally forced out of
 the groove 35, allowing the holder 3 to rotate upon the top of the groove 35 in the
 direction of the arrow 'A' (Fig 5), sufficiently to allow the club to pass. A cavity 36
 is provided to allow the necessary travel of the lower part of the holder stem 6, in the
 opposite direction.

110 The board 31 can be located in a well-drained ground recess of the golf course, or the
 floor of the driving range. Also, the board area around the tee can be made large
 enough to generally prevent club contact with the surrounding grass, or floor, surface.
 It can also be made part of a raised platform which raises the playing surface above
 ground, or floor, level.

115 For the driving range, the board can be rectangular with the bristles located in equip-
 spaced parallel rows. However, for the golf course use, Rule 14-3 of the game may
 require that the board be circular and the bristles distributed in circles concentric
 around the holder 2 and spaced as uniformly as possible. In either case, the bristle
 spacing and direction of the bristles are such that the keeper 3 and the cavity 36 are
 120 concealed by the bristles from the view of the player.

For retention of the holder 2 to the keeper 3, the end of the holder stem 6 is given the
 knitting-needle hook form shown. This is aligned so as to engage with the binder 34,
 if lift occurs. The stem 6 can easily be withdrawn from the keeper 3 groove, if the
 holder is rotated one quarter of a turn from the position shown.

- 125 For a fourth embodiment, the keeper and binder of the third embodiment can be similarly applied to any driving-range or practice-net mat of sufficient thickness, for use with a similar but shorter holder.